

Wolkair User' s Manual

Summary

Wolkair GU-Series of screw air ends is a kind of oil injected rotary air ends,

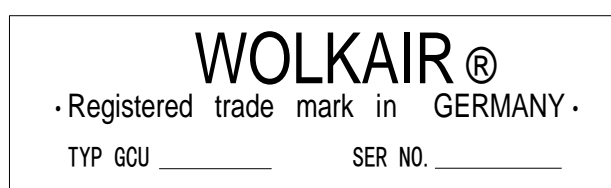
Wolkair GCU-Series compact design and easy handling of this product range. GCU Series incorporate seven components in one unit: air filter, intake valve, air end, oil reservoir, separator system and thermostatic valve. The integrated design make the system more efficient and smaller in size.

The GU/GCU series are use for assembling air compressor. and covers a power range from 4-55 kW (6-75 hp).

Screw compressors are especially suit for the long-time, continuous work conditions.

Nameplate

The nameplate is attached on every unit housing. If you have any questions, just quote the data on the nameplate so that you can get the right information.



Structure

The rotors are supported by bearings, there are screw or flange on the intake end and the discharge end for mounting. There is axial seal for housing and rotors, and radial seal for the drive shaft.

There is orifice in oil recovery pipe, all the Wolkair air ends and compact units have this orifice.

Storage

Recommended maintenance oil

For the surface of the housing:

Tecrex 39	Mobil
Rust Ban 324	Esso
U-Product 9703	Shell

For the internal of the unit:

Lub MZ 20 W/20	Esso
Ensis Motor Oil 20	Shell
Mobilarma 523 / 524	Mobil

The above-mentioned are only to the long-time storage units.

For temporary storage, you must ensure the ambient dry and with no shock, do not remove the covers on the intake and discharge end of the units, so that to prevent from anything fall in.

Driving and Installation

Driving

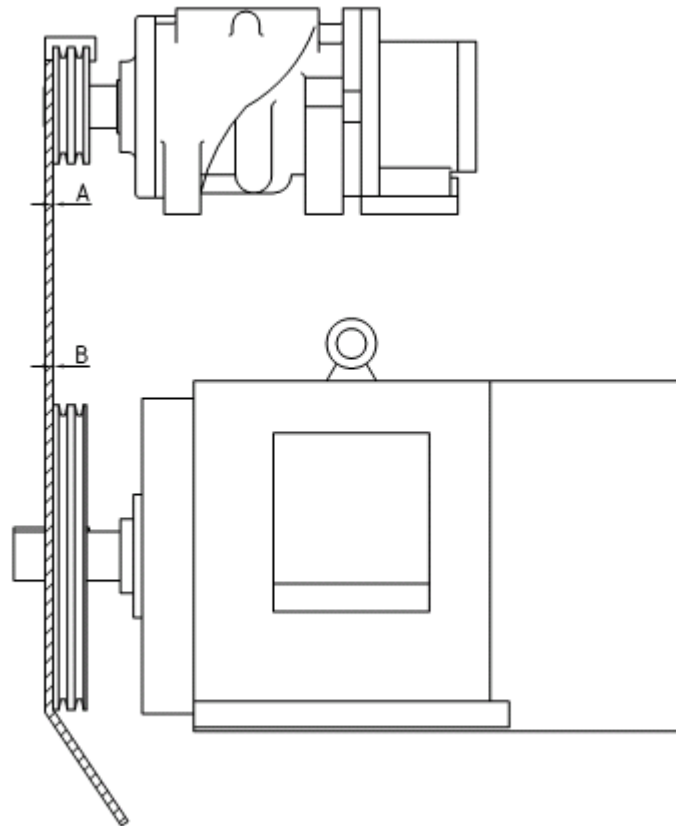
Wolkair air ends can be driven by electric motors or internal combustion engines

The correct direction of rotation indicated by the arrow on the housing of the unit. Wrong direction will cause irreversible damage to the unit in several seconds.

V-belt Pulley

A suitable V-belt pulley must be mounted on the drive shaft if the compressor is V-belt driven. The pulley should be adapted to the compressor shaft and balanced to 100% concentricity.

The pulley should be made of cast iron.



When placing and tightening a guidance line, the distance A or B should be 0 (zero), Max 0.2mm.

Perform the horizontal alignment by shifting the motor pulley on its shaft

Perform the lateral alignment by turning the adjusting screws.

After the adjustment, tighten the motor fastening screws securely.

The diameter of the pulley should be calculated precisely, because the rotation speed of the air end depends on it.

V-belt tensioning

V-belt tensioning is effected by the setscrew located directly at the motor mounting. First testing after 2 working hours, then after 24 working hours and finally every 1000 working hours.

The V-belt should be SPZ/SPB/SPA profiled, and belt length according to the relevant unit type.

Intake air filter

The filter cartridge with a fineness level of $\leq 0.02\text{m}$ is fit for the intake air filter.

Fineness level of the oil filter:

$\leq 0.010\text{mm}$ for the units smaller than 30kw

$\leq 0.025\text{mm}$ for the units larger than 30kw.

Oil path

Please use cylindrical connector and copper washer (no teflon tape and sealant) when connect the oil inject hose. Do not use tapered connector for it may split the casting.

Mounting

If mounting from the bottom of the unit, the support surface must be processed after welding, to ensure its smoothness , or else uneven surface may make the air end distorted .

The torque values given below apply to bolts in a greased condition.

Bolt type	Thread	Max. torque
allen screw	M 6	10 Nm (7ft.lbs)
allen screw	M 8	25 Nm (18 ft.lbs)
allen screw	M 10	45 Nm (32 ft.lbs)
allen screw	M 12	75 Nm (53 ft.lbs)
allen screw	M 14	120 Nm (85 ft.lbs)
allen screw	M 16	180 Nm (126 ft.lbs)

Temperature control

The temperature sensor is fitting at the discharge end of the unit.

A screw compressor must be working in right temperature to avoid the precipitation of liquid water. The temperature difference between the inlet and outlet of the oil cooler should be about 20° C.

Other interface

The interface beside the intake flange can be used to connect the security pressure switch, to protect the air end from the wrong rotation direction or start up with pressure.

Lubrication

The lubrication starts when the air end start running, the necessary pressure is already formed in the oil/air separator tank. The minimum-pressure valve maintains the necessary work pressure which can not be less than 3.5Bar when the air end running. When the air end is idle running the oil pressure could not be less than 1 Bar(g).

The break point of temperature is 110°C

Oil is cooled to 50-60°C, filtered, than injected to the compress cavity. Usually one interface is enough.

The bearing lubrication is practiced by the internal pipe of the air end.

Unobstructed pipeline and efficient oil/air separator ensures the oil circulate without loss. The oil change frequency is designed once per 4000 hours, but for the existence of the environmental pollution and air impurities, we suggest to check the oil every 2000 hours and change the oil when necessary.

The function of the oil:

1. To lubricant the rotors and the bearings
2. To ensure the seal between the rotors or between the rotor and the housing.
3. To cool the system
4. To decrease the noise

Wolkair air end do not need oil pump, the oil circulation is driven by the oil pressure.

Oil Selection

Wolkair Screw Compressors must be operated with suitable Oil. It must be suitable for use in different conditions such as contamination of the intake air by gases, solvent vapours, exhaust gases and in high ambient temperature.

Use the same product and the same oil type. Do not mix different oil types!

If the ambient temperature is close to the oil freezing point, protect the unit from freezing.

The oil for screw compressor should meet the following requirements:

1. High ageing stability
2. High dispersive capacity
3. Low emulsification tendency
4. Flash point: above 200° C
5. Pour point: minimum 5 degrees below the lowest ambient temperature
6. Viscosity class of the oil should be ISO VG32to68

Preparations for start-up

Before running the compressor, check it , make sure it meet the specifications.

There may be no oil in the air end after transportation and storage. Add 1/4 to 1/2 clean oil into the air end from the intake, then rotate the rotor by hand before start. If the compressor has a too long idle time, you should also do this.

Fill the oil tank.

You can start up the compressor after check all the equipments in it.

Warranty

Wolkair provide a 24-month warranty for the airend and 18-month for the Shaft seal.

The warranty is not include:

- . Operating errors/faults
- . Inadequate maintenance
- . Non-compliant fuels/working materials
- . Failure to use original spare parts
- . Reconstruction/conversion work on the unit

Maintenance

Maintenance and repair work may only be executed under the supervision of a person qualified for this work.

1. Use the suitable tools for the maintenance and repair work
2. Use the original spare parts
3. Execute and maintenance or repair work only when the unit is switched off and the power supply is disconnected. Make sure that the unit will not be switched on unintentionally.
4. Cut off the unit from any pressure sources and discharge the unit from pressure before removing a part.
5. Take care that extreme cleanliness is observed during maintenance or repair. Keep away dust. Cover parts or bare should be opened with clean cloth or paper.
6. Make sure that No tools and loose parts etc are left in the unit.